



5-year warranty



Technical data

<b>Electrical data</b>	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Power consumption in operation	3.5 W
	Power consumption in rest position	1.3 W
	Transformer sizing	6 VA (class 2 power source)
	Electrical Connection	18 GA plenum cable with 1/2" conduit connector, degree of protection NEMA 2 / IP54, 3 ft [1 m] 10 ft [3 m] and 16ft [5 m]
	Overload Protection	electronic throughout 0...95° rotation
<b>Data bus communication</b>	Communicative control	LON (FTT-10A)
<b>Functional data</b>	Torque motor	180 in-lb [20 Nm]
	Position feedback U	2...10 V
	Position feedback U note	Max. 0.5 mA
	Position feedback U variable	VDC variable
	Direction of motion motor	selectable with switch 0/1
	Manual override	external push button
	Angle of rotation	Max. 95°
	Angle of rotation note	adjustable with mechanical stop
	Running Time (Motor)	150 s / 90°
	Noise level, motor	45 dB(A)
	Shaft Diameter	1/2...1.05" round, centers on 1/2" and 3/4" with insert, 1.05" without insert
	Position indication	Mechanically, 30...65 mm stroke
	<b>Safety data</b>	Degree of protection IEC/EN
Degree of protection NEMA/UL		NEMA 2
Enclosure		UL Enclosure Type 2
Agency Listing		cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2014/30/EU and 2014/35/EU; Listed to UL 2043 - suitable for use in air plenums per Section 300.22(c) of the NEC and Section 602.2 of the IMC
Quality Standard		ISO 9001
Ambient temperature		-22...122°F [-30...50°C]
Storage temperature		-40...176°F [-40...80°C]
Ambient humidity		Max. 95% RH, non-condensing
Servicing		maintenance-free
<b>Weight</b>		Weight
<b>Materials</b>	Housing material	UL94-5VA

**Footnotes** †Rated Impulse Voltage 800V, Type action 1, Control Pollution Degree 3.

**Product features**

**Typical specification** Proportional control damper actuators shall be electronic direct-coupled type, which require no crank arm and linkage and be capable of direct mounting to a shaft from 1/4" to 1/2" diameter. Actuators must provide proportional damper control response to a 2 to 10 VDC or, with the addition of a 500Ω resistor, a 4 to 20 mA control input from an electronic controller or positioner. Actuators shall have brushless DC motor technology and be protected from overload at all angles of rotation. Actuators shall have manual override on the cover. Run time shall be constant and independent of torque. Actuators shall be cULus listed, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

**Accessories**

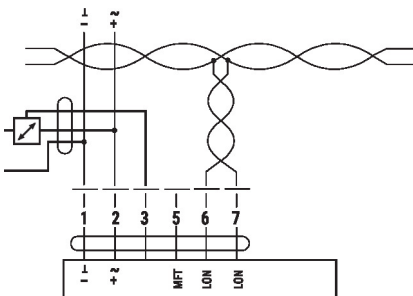
Electrical accessories	Description	Type
	Auxiliary switch 1 x SPDT add-on	S1A
	Auxiliary switch 2 x SPDT add-on	S2A
	Auxiliary switch, mercury-free	P475
	Auxiliary switch, mercury-free	P475-1
	Feedback potentiometer 140 Ω add-on, grey	P140A GR
	Feedback potentiometer 500 Ω add-on, grey	P500A GR
	Feedback potentiometer 1 kΩ add-on, grey	P1000A GR
	Feedback potentiometer 2.8 kΩ add-on, grey	P2800A GR
	Feedback potentiometer 5 kΩ add-on, grey	P5000A GR
	Feedback potentiometer 10 kΩ add-on, grey	P10000A GR
	Feedback potentiometer 15 kΩ gray	P15000A-F GR
	Battery backup system, for non-spring return models	NSV24 US
	Battery, 12 V, 1.2 Ah (two required)	NSV-BAT
	Transformer, AC 120 V to AC 24 V, 40 VA	ZG-X40
	Cable conduit connector 1/2"	TF-CC US
	Cable Gland (NEMA 4 models)	43442-00001

**Mechanical accessories**

Description	Type
Damper crank arm Slot width 6.2 mm, clamping range Ø10...18 mm	KH6
Damper crank arm Slot width 8.2 mm, clamping range Ø10...18 mm	KH8
Damper crank arm Slot width 8.2 mm, clamping range Ø14...25 mm	KH10
Damper crank arm Slot width 8.2 mm, for Ø1.05"	KH12
Ball joint suitable for damper crank arm KH8, Multipack 10 pcs.	KG6
Ball joint suitable for damper crank arm KH8, Multipack 10 pcs.	KG8
Ball joint suitable for damper crank arm KH8 / KH10, Multipack 10 pcs.	KG10A
Push rod for KG6 & KG8 ball joints (36" L, 5/16" diameter).	SH8
Push rod for KG10A ball joint 36" L, 3/8" diameter	SH10
Damper clip for damper blade, 3.5" width.	ZG-DC1
Damper clip for damper blade, 6" width.	ZG-DC2
Weather shield 330x203x152 mm [13x8x6"] (LxBxH)	ZS-100
Base plate, for ZS-100	ZS-101
Weather shield 406x213x102 mm [16x8-3/8x4"] (LxWxH)	ZS-150
Shaft extension 240 mm Ø20 mm for damper shaft Ø 8...22.7 mm	AV8-25
Anti-rotation bracket TF/NKQ/AM/NM/LM.	TF-P
<p>17" Mounting Bracket for AF,NF,GM,AM,SM</p>	ZG-100
<p>Mounting Bracket: AF,NF,LF,GM,AM,NM,SM</p>	ZG-101
Wrench 0.32 in and 0.39 in [8 mm and 10 mm]	TOOL-06
Adapter for auxiliary switch and feedback potentiometer	Z-SPA
Actuator arm for standard shaft clamp (one-sided)	AH-25
<p>Clamp NM/AM 1/2", 3/4", 1"</p>	K-AM25
Shaft clamp reversible, clamping range Ø10...20 mm	K-SA
<p>Mounting Bracket: ZS-260 Right Angle</p>	ZG-109
<p>Linkage kit</p>	ZG-110
Mounting bracket for LF..	ZG-112
1" diameter jackshaft adaptor (11" L).	ZG-JSA-1
1-5/16" diameter jackshaft adaptor (12" L).	ZG-JSA-2
1.05" diameter jackshaft adaptor (12" L).	ZG-JSA-3
Mounting kit for linkage operation for flat installation	ZG-NMA ZG-JSL
Explosion proof housing 406x254x164 mm [16x10x6.435"] (LxBxH), UL and CSA, Class I, Zone 1&2, Groups B, C, D, (NEMA 7), Class III, Hazardous (classified) Locations	ZS-260
Weather shield 438x222x140 mm [17-1/4x8-3/4x5-1/2"] (LxBxH), NEMA 4X, with mounting brackets	ZS-300
Weather shield 438x222x140 mm [17-1/4x8-3/4x5-1/2"] (LxBxH), NEMA 4X, with mounting brackets	ZS-300-5
Shaft extension 1/2"	ZS-300-C1
Shaft extension 3/4"	ZS-300-C2
Shaft extension 1"	ZS-300-C3
Base plate extension for SM..A to SM../AM../SMD24R	Z-SMA

**Service tools**

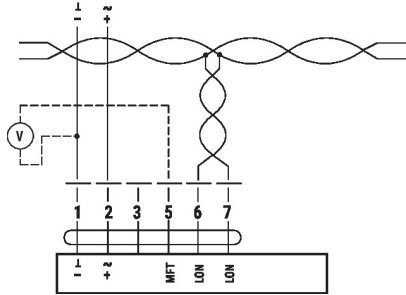
Description	Type
Signal simulator, Power supply AC 120 V	PS-100

**Electrical installation**


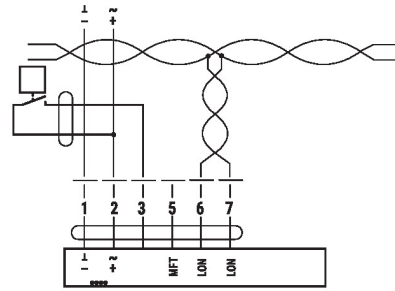
Connection with Active Sensor, e.g. 0...10 V @ 0...50°C

**Wiring diagrams**

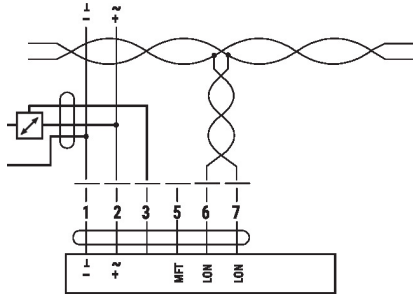
Connection without Sensor



Connection with Switching Contact, e.g. p-monitor



Connection with Active Sensor, e.g. 0...10 V @ 0...50°C



**Dimensions**

∅ 1/2" to 1.05" [12.7 to 26.67]

□ 2/5" to 1.05" [10 to 26.67]

